

WHAT IS CLAIMED IS:

1. An additive injection system, used in in-situ soil remediation by electrokinetics for removing heavy metals and
5 organic substances present in contaminated soil by applying electric power to an anode and a cathode to induce electroosmosis and electromigration in the soil wherein the anode and the cathode are oppositely installed in the soil and the cathode is spaced apart from the anode by a fixed
10 distance, comprising:

a cylindrical housing; an electrode selected from the anode and the cathode and positioned in the cylindrical housing; a plurality of discharging slots formed in the cylindrical housing; a filter adhered to the inner surface of the housing; a negatively charged filler filled in the housing and surrounding the electrode; and flushing solution supplied to the filler through an injection nozzle in such a manner that flushing solution is maintained at a constant level and flows into the soil by electroosmosis,

20 wherein the filter has permeability higher than the filler and the filler has permeability lower than the soil.

25 2. A method for injecting flushing solution into soil by inducing electroosmosis between negatively charged filler particles surrounding an electrode to allow water and flushing

solution to flow into soil,

wherein the filler particles have permeability lower
than the soil.